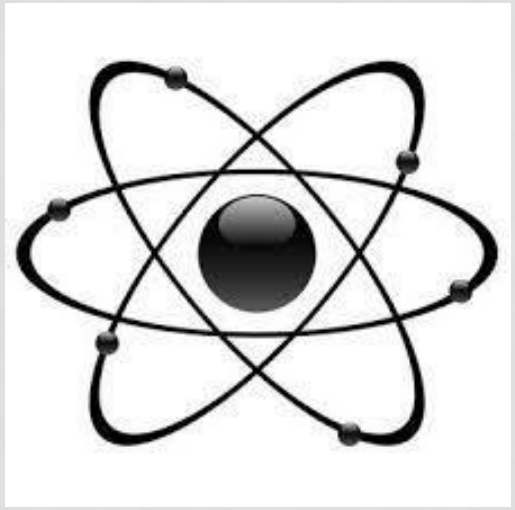
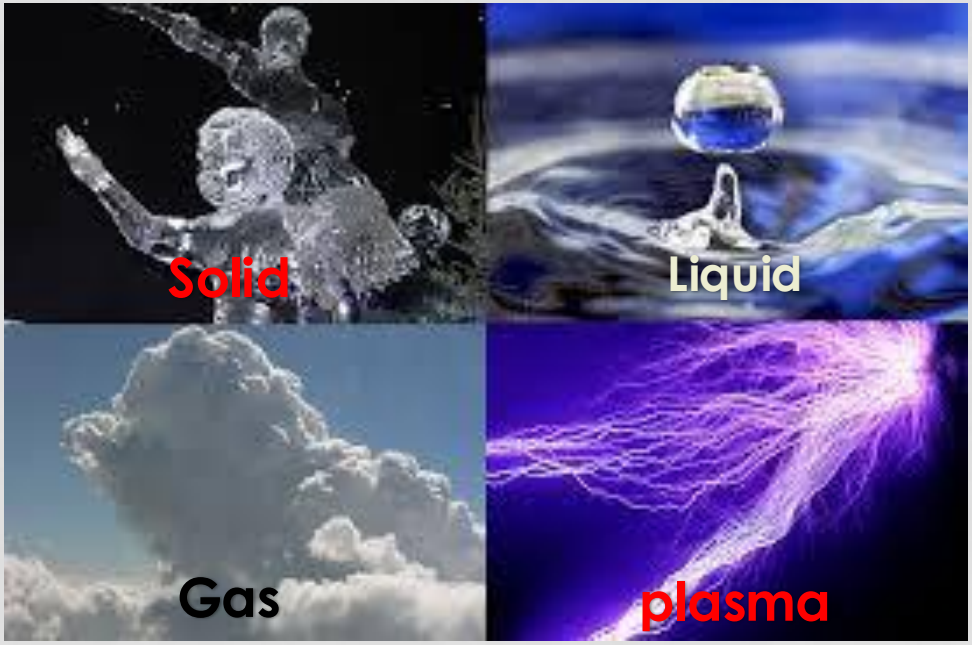


COMMON CHEMISTRY TERMS

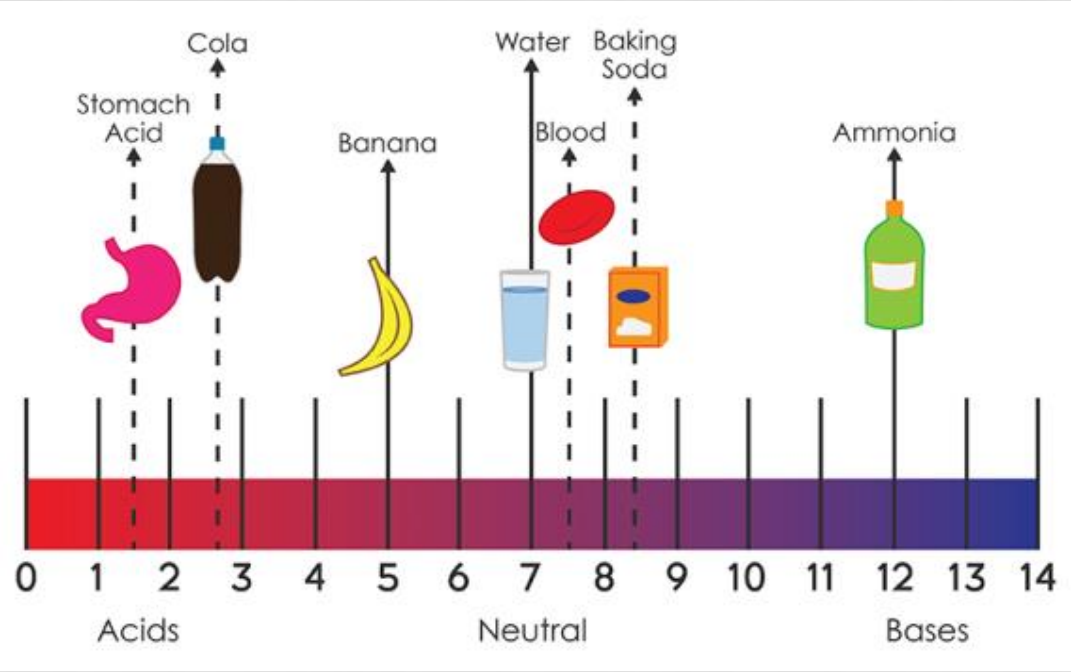
MATTER

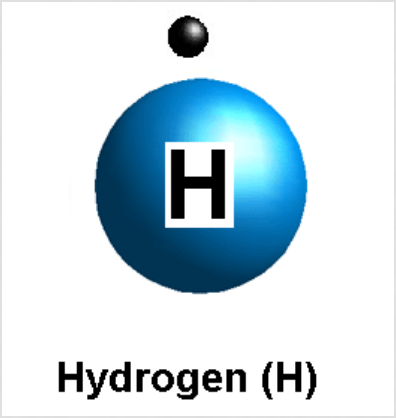
- Definition: term for any type of material; anything that has mass and takes up space
- 4 primary states of matter
  - There may be limitless states of matter



pH

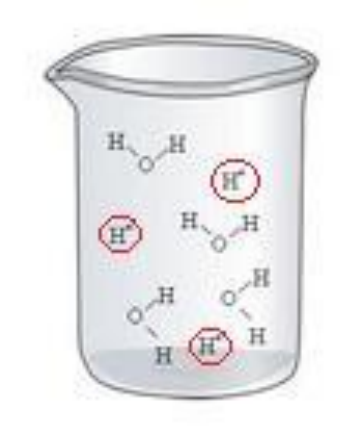
- Definition: measure of Hydrogen ion concentration
  - measure of the acidity or basicity of an aqueous solution

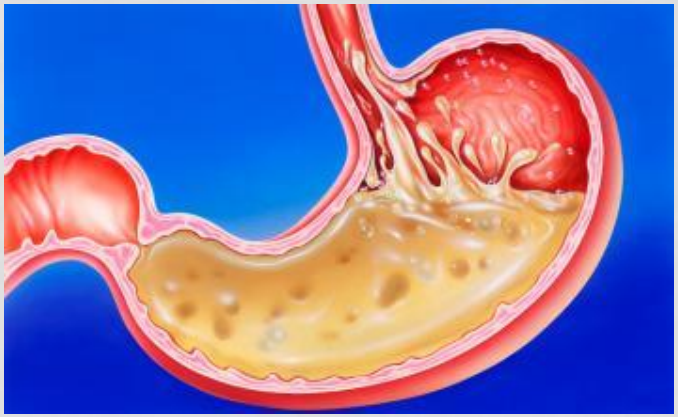




ACID

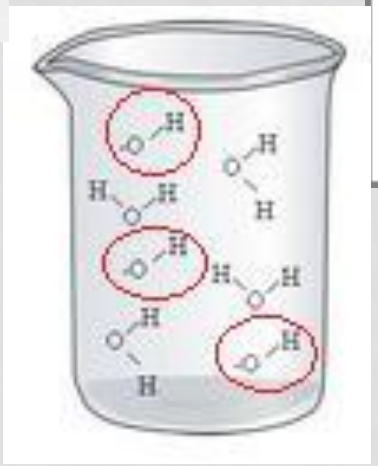
- Definition: substance that gives off H^+ ions in water and has a pH < 7

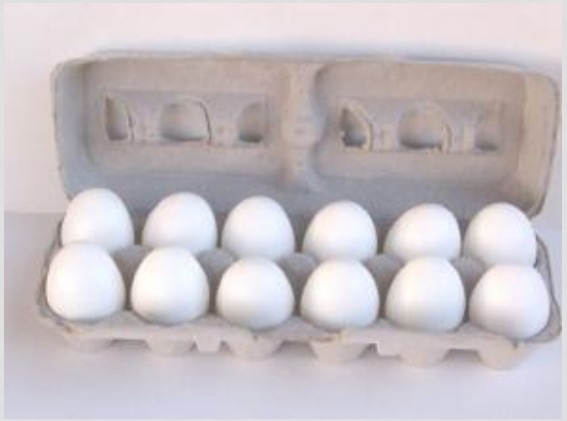




BASE

- Definition: A compound that gives off OH^- ions in water and have a pH > 7





MIXTURE

- Definition: A mixture is what you get when you combine two or more substances
- No chemical reaction occurs
- Can separate substances again
- Example: different fruits

MIXTURE TYPES

Heterogeneous

- Definition: parts of a mixture that are not evenly distributed

Homogeneous

- Definition: parts of a mixture that are evenly distributed

SOLUTION

- Definition: where one substance is evenly and completely dissolved into another
- Chemical reaction occurs
- Substances can not be separated
- Example: air ⟹ Nitrogen + Oxygen
- Example: carbon dioxide in soda

VAPORIZATION

- Definition: a change from liquid to gas
- Example: Water

SUBLIMATION

- Definition: a change from solid to gas
- Example: dry ice

DEPOSITION

- Definition: a change from gas to solid
- Example: frost

CONDENSATION

- Definition: a change from a gas to liquid
- Example: Water gathering on a cold bottle

FREEZING

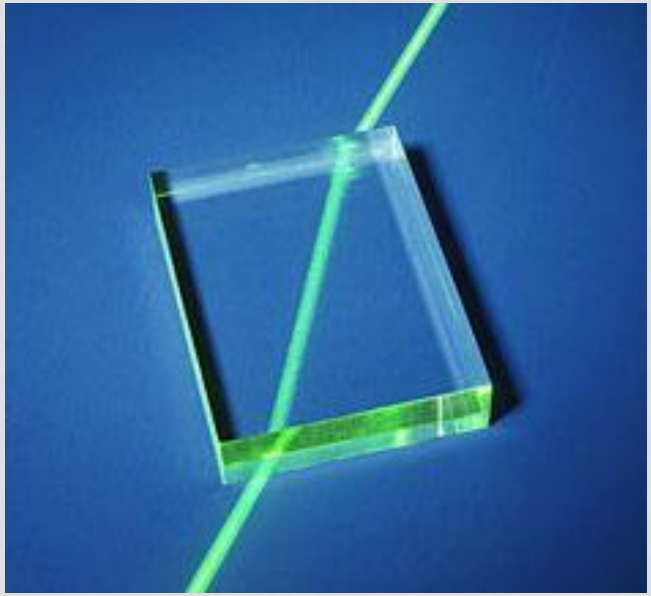
- Definition: a change from liquid to solid
- Example: ice

MELTING

- Definition: a change from solid to liquid
- Example: candle wax

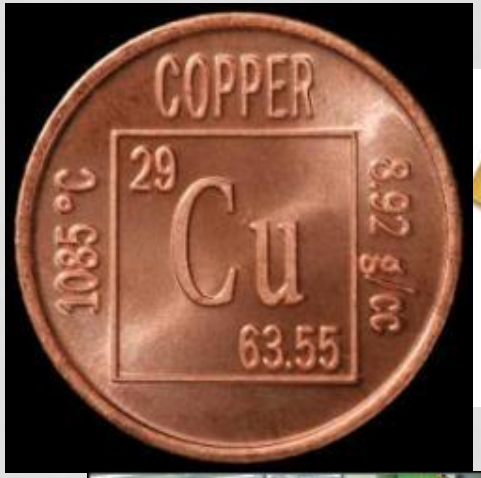
REFRACTION

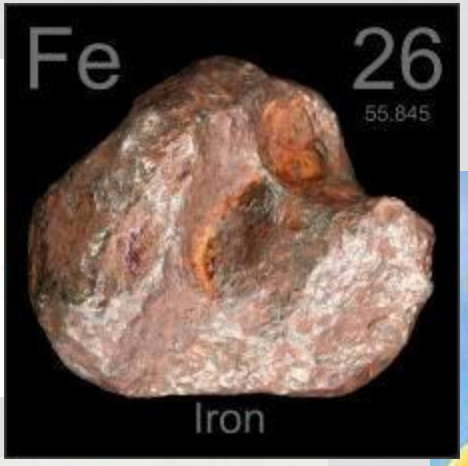
- Definition: bending of light as it passes from one substance to another



ELEMENT

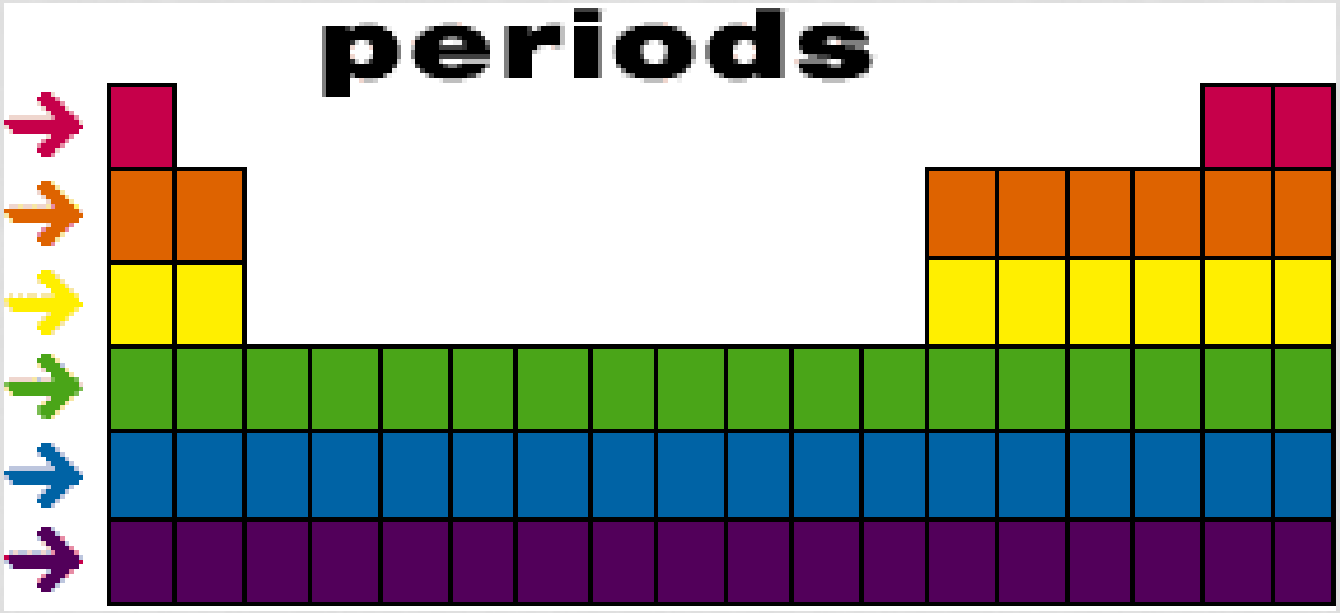
- Definition: a substance that cannot be separated into simpler substances





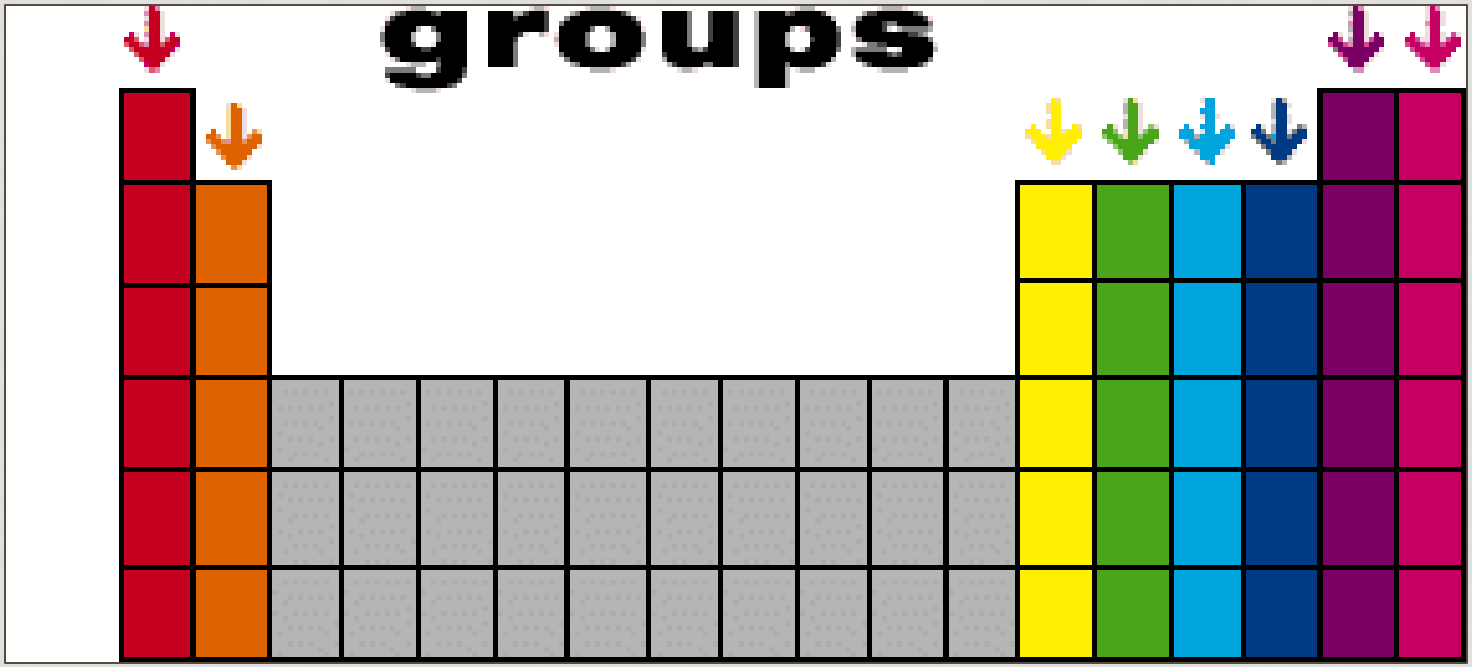
PERIOD

- Definition: a horizontal row of elements in the periodic table



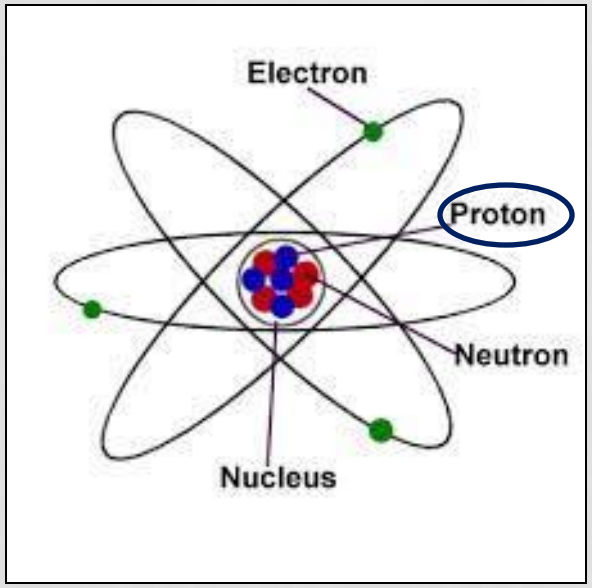
FAMILIES/GROUPS

- Definition: a vertical row of elements in the periodic table
- These elements have similar properties



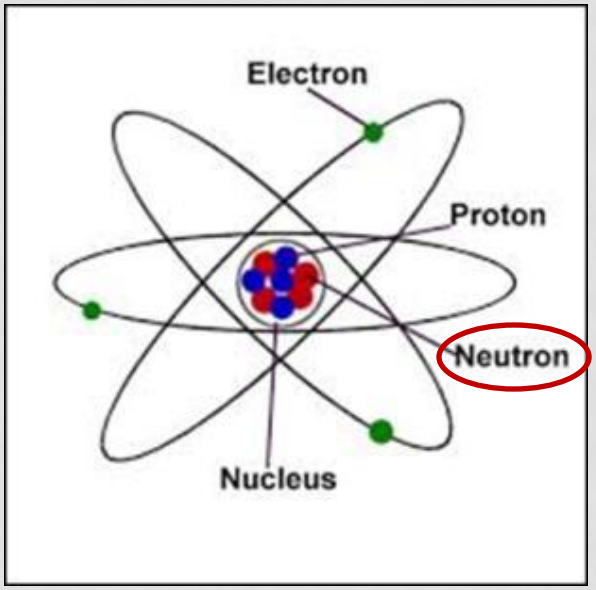
PROTONS

- Definition: positively charged particles in the nucleus
- Hydrogen ion, H^+ is a proton



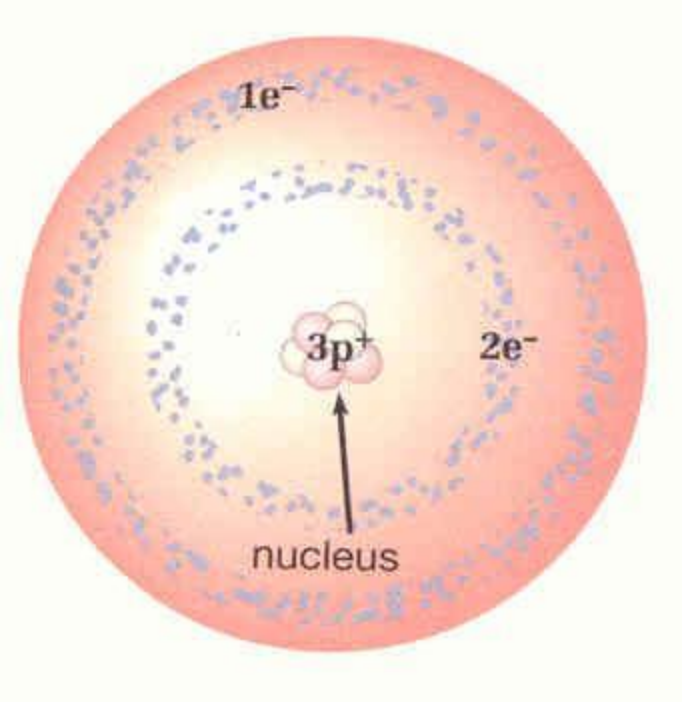
NEUTRONS

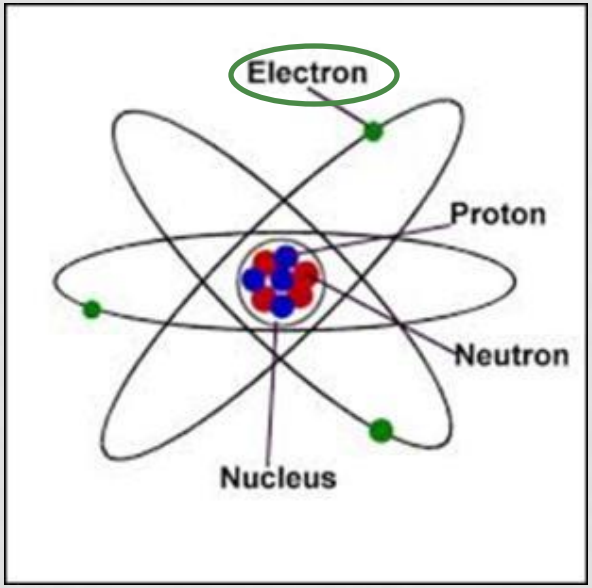
- Definition: neutrally charged particles in the nucleus



ELECTRONS

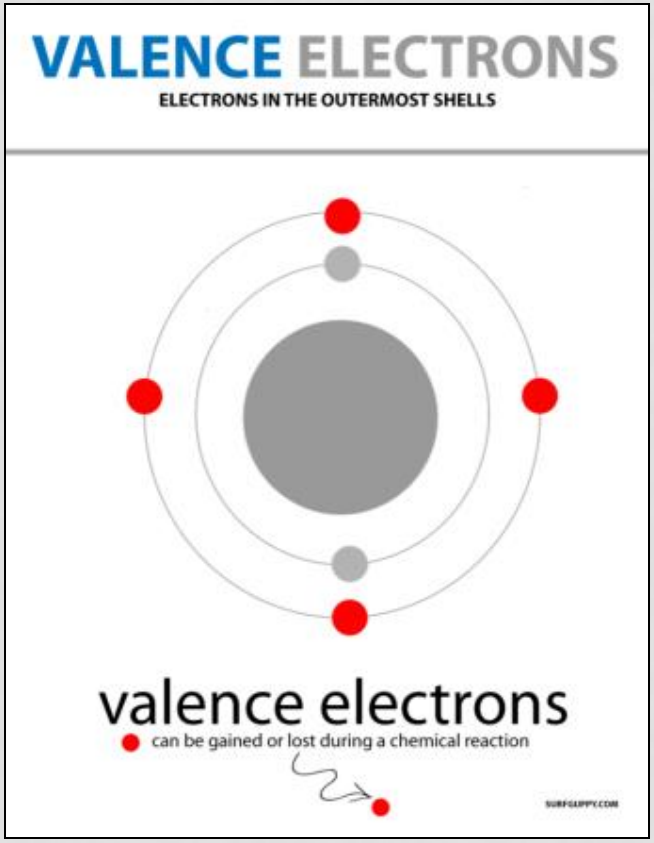
- Definition: negatively charged particles outside the nucleus





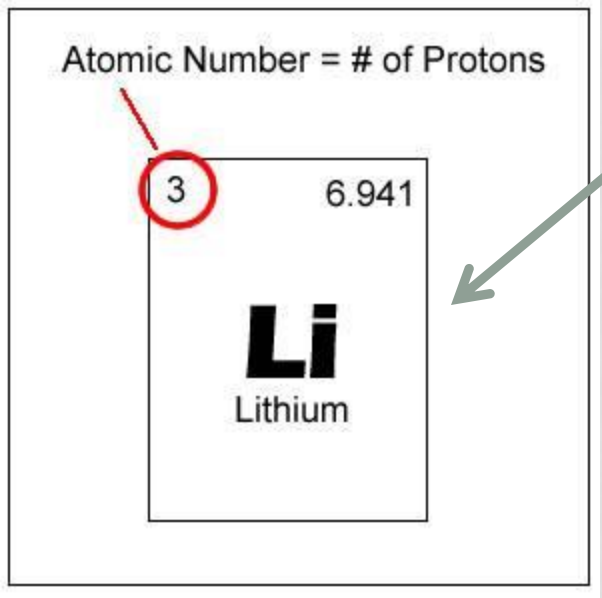
VALENCE ELECTRONS

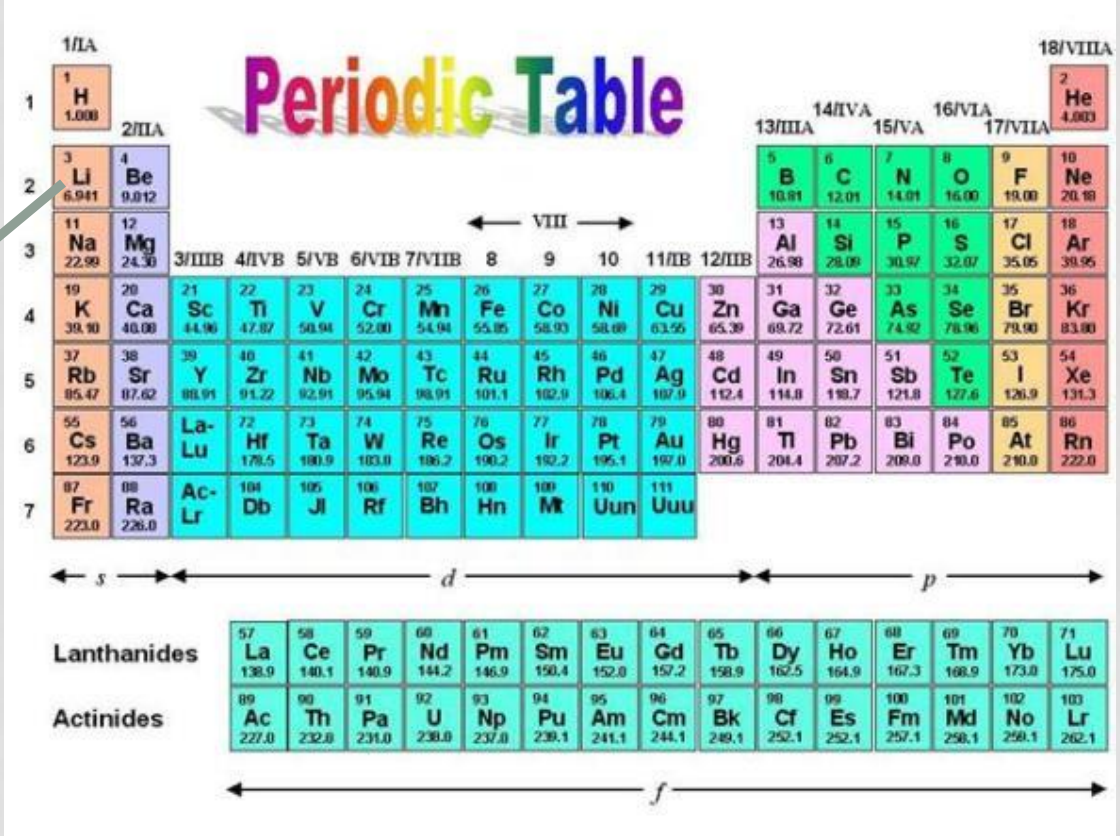
- Definition: electrons in the outer shell of an atom
- Involved in forming bonds to adjacent atoms


VALENCE ELECTRONS
ELECTRONS IN THE OUTERMOST SHELLS
valence electrons
can be gained or lost during a chemical reaction

ATOMIC NUMBER

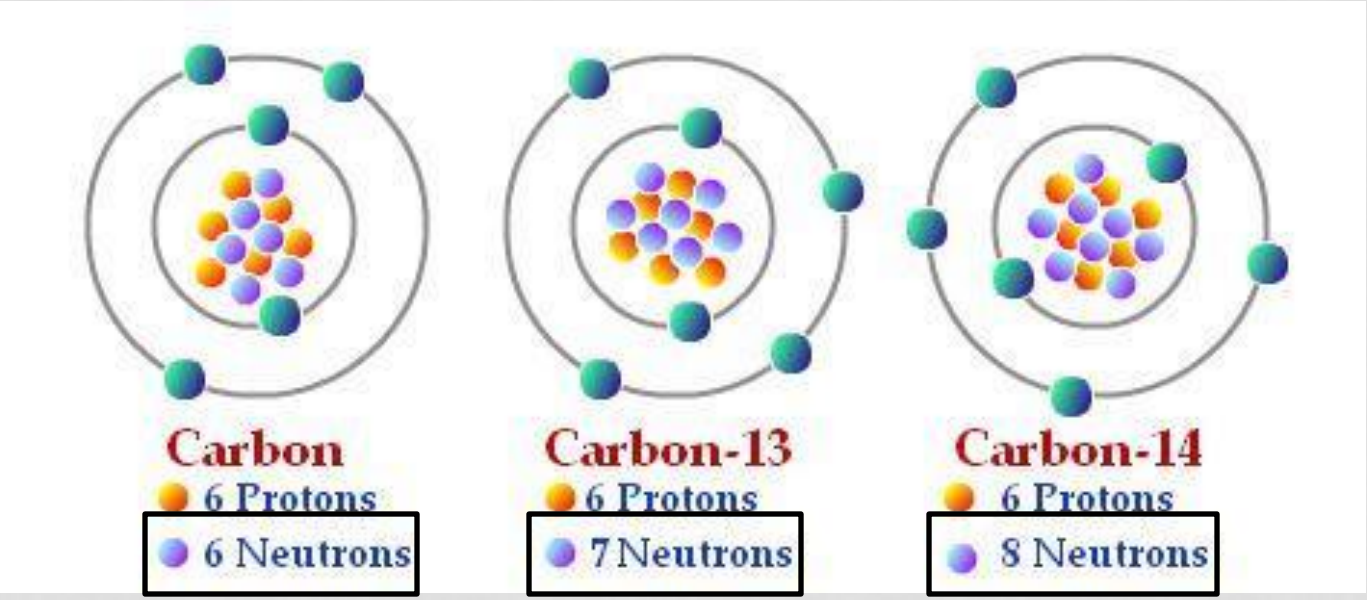
- Definition: the number of protons in the nucleus of an atom





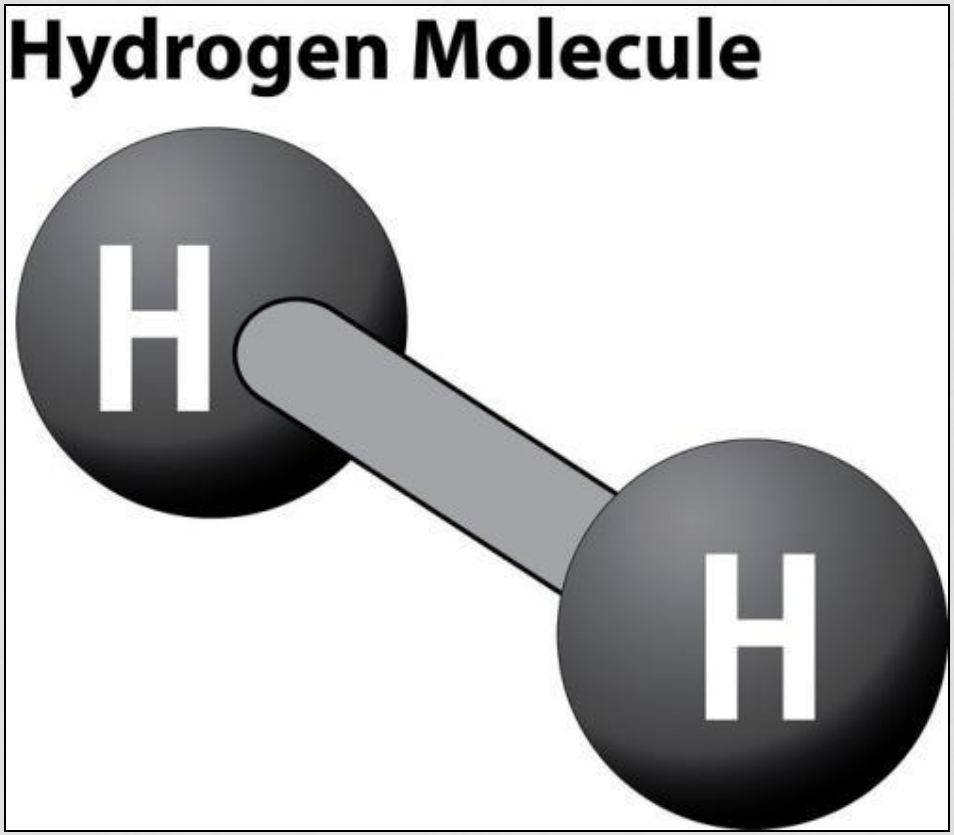
ISOTOPES

- Definition: atoms of the same element that have different numbers of neutrons



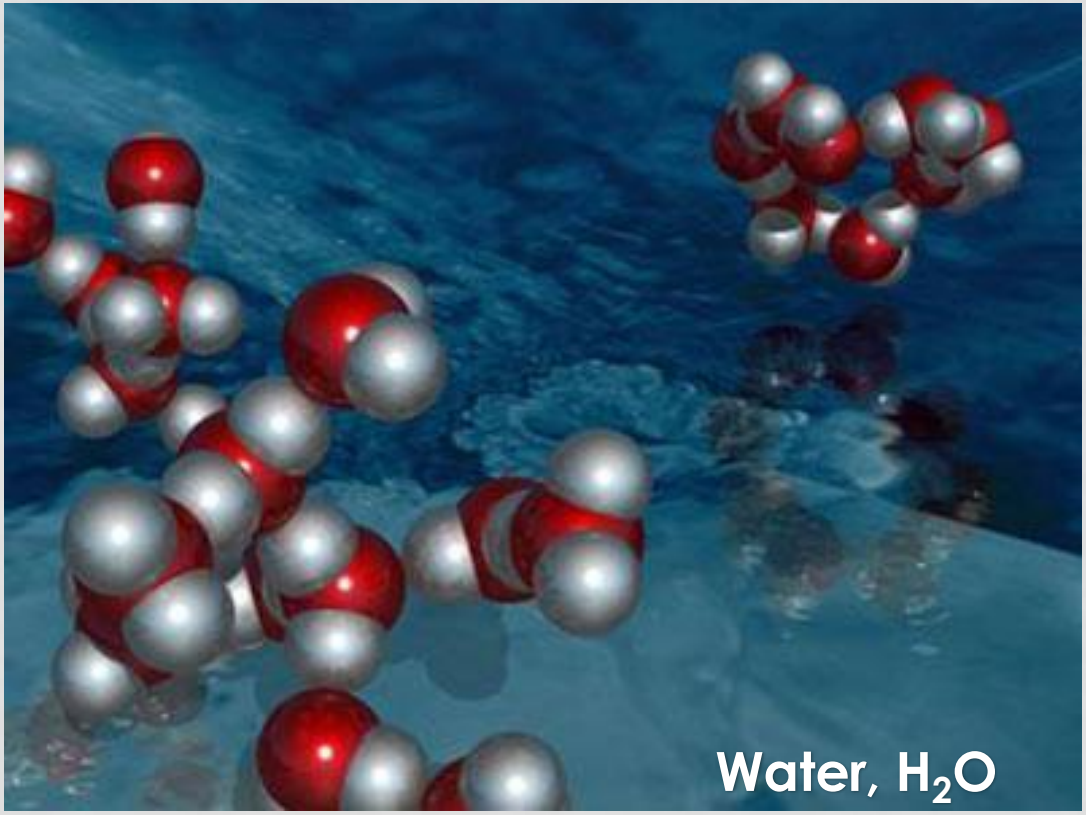
MOLECULE

- Definition: atoms that are connected by chemical bonds



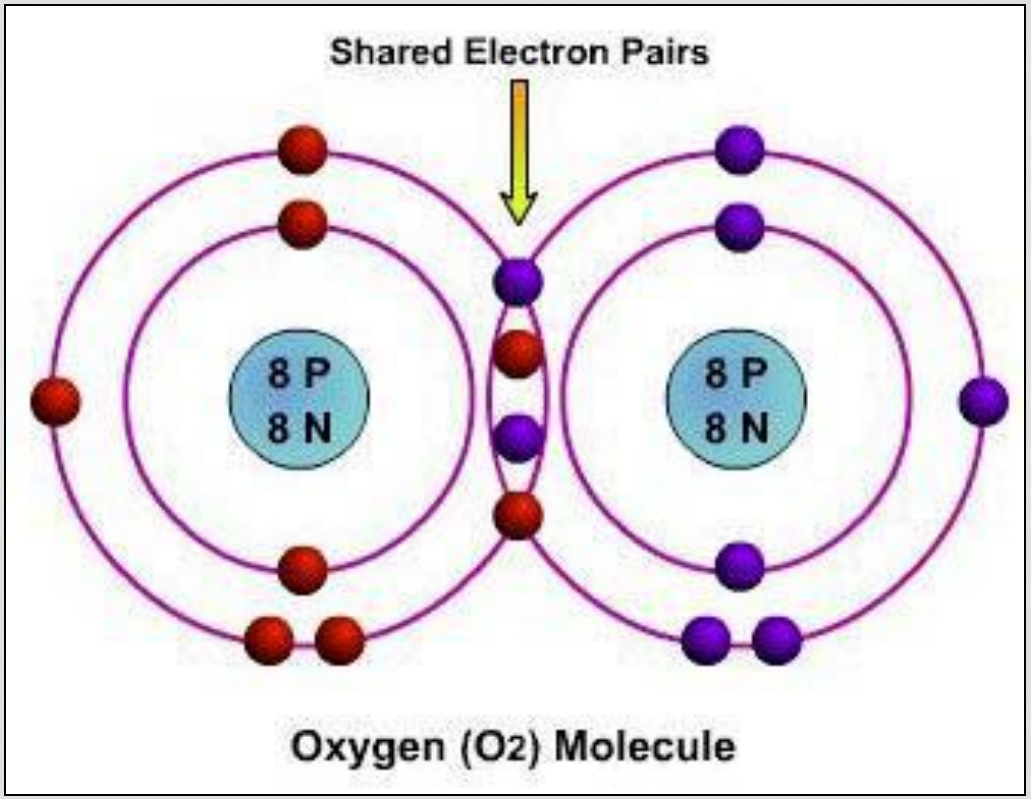
COMPOUND

- Definition: a pure chemical substance consisting of two or more different elements



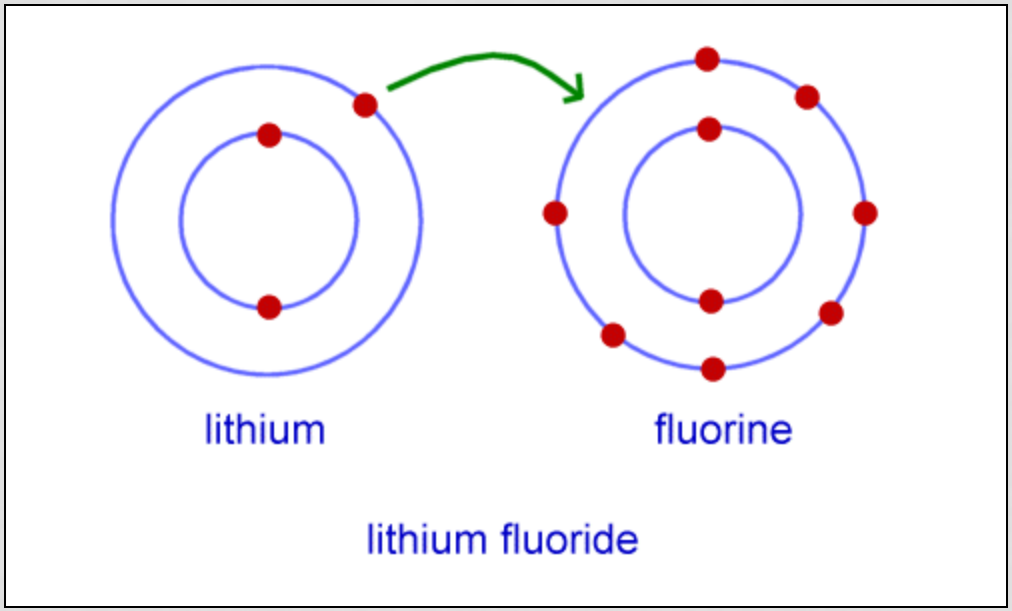
COVALENT BOND

- Definition: a chemical bond that involves the sharing of electron pairs between atoms



IONIC BOND

- Definition: bonds in which atoms that have lost one or more electrons and atoms that have gained one or more electrons.



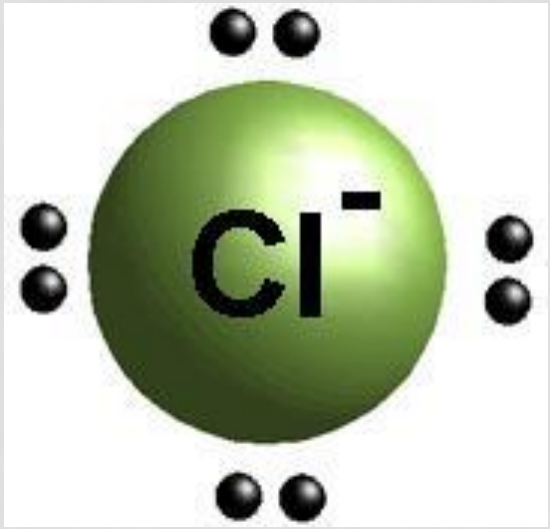
bonding animation

CATION

- Definition: positively charged atom or group of atoms
- Examples: Calcium Ca^{2+}, Silver Ag^{+}, Potassium K^{+}

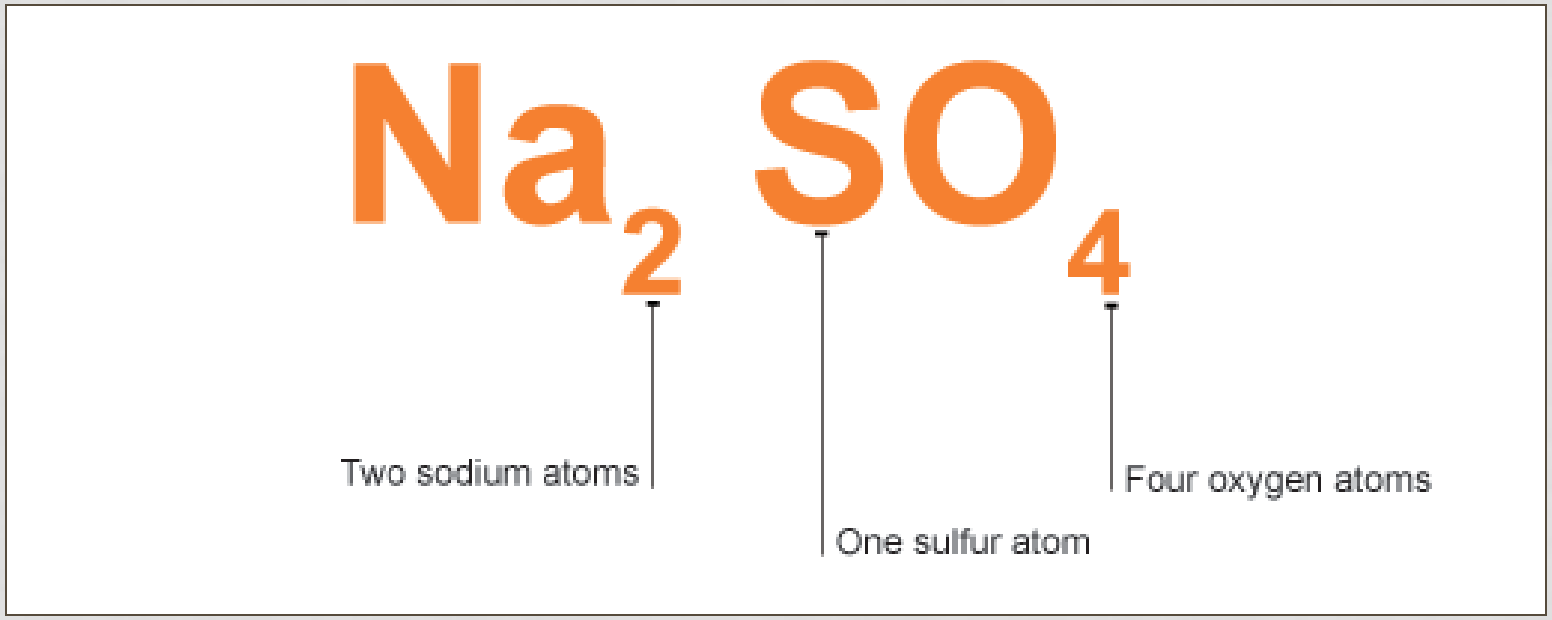
ANION

- Definition: negatively charged atom or group of atoms
- Examples: Fluoride F^-, Chloride Cl^-, Iodide I^-



CHEMICAL FORMULA

- Definition: An expression which states the number and type of atoms present in a molecule of a substance.

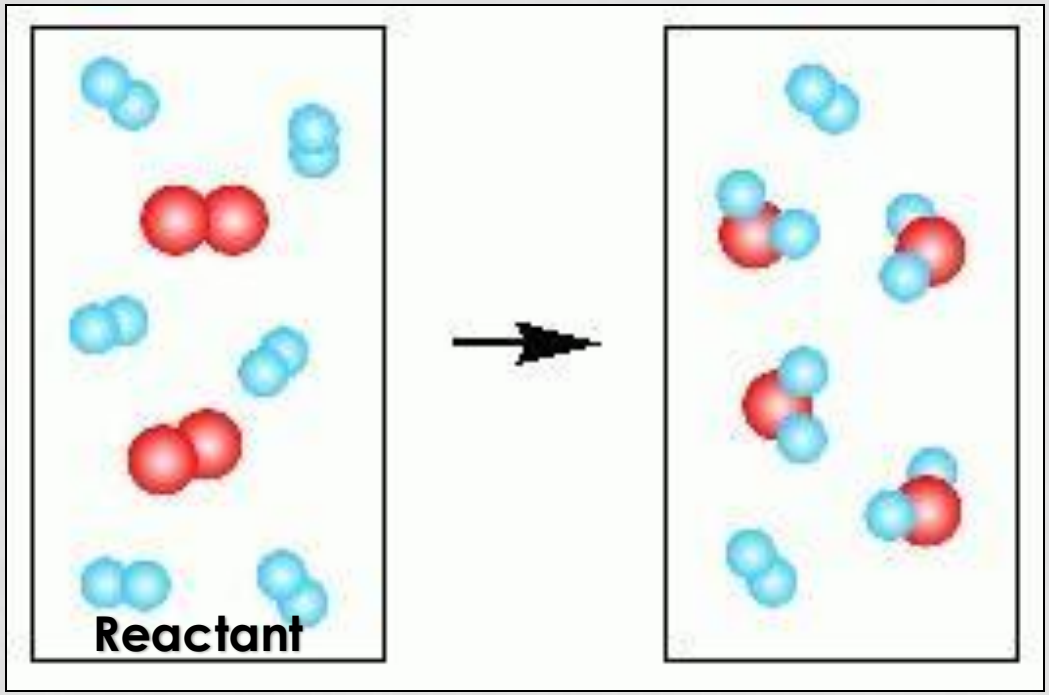


CHEMICAL REACTION

- Definition: A process where a set of substances undergo a chemical change to form a different substance.

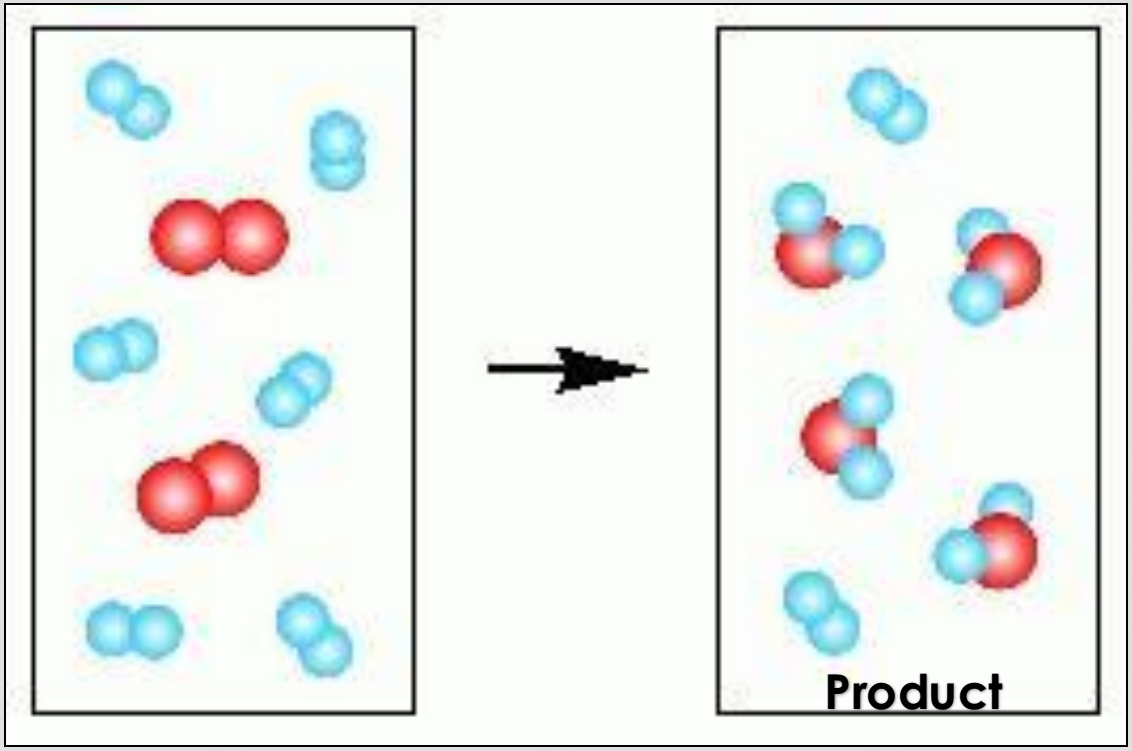
REACTANT/REAGENT

- Definition: substances that are used to bring about a chemical reaction
- any substance that is consumed or used up during the reaction



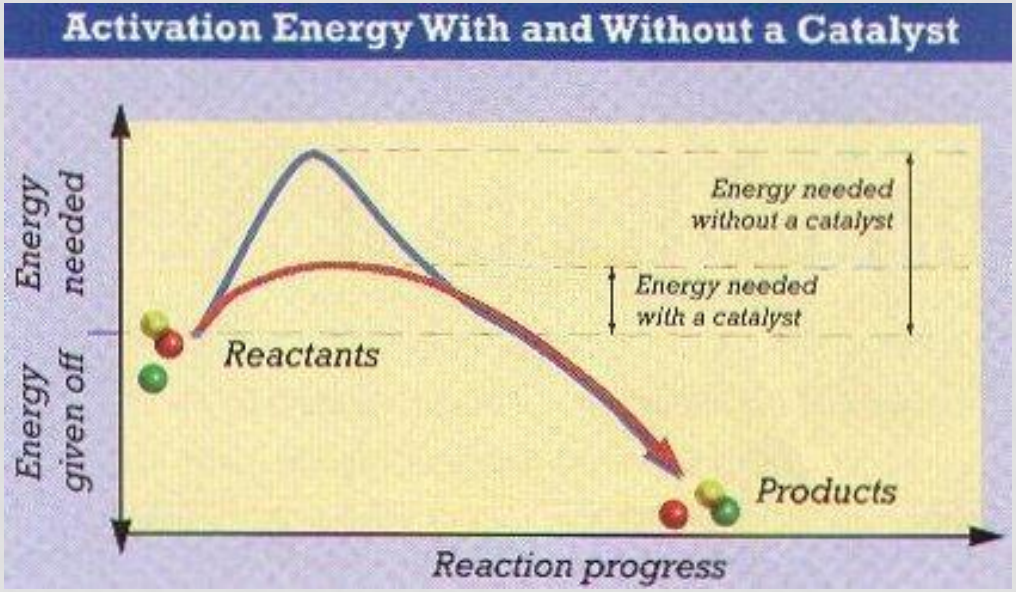
PRODUCT

- Definition: The substance that is produced by a chemical reaction



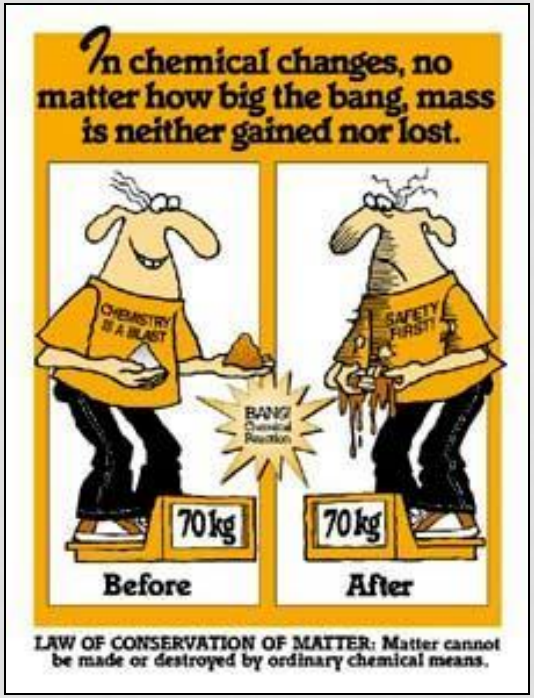
CATALYST

- Definition: substance that speeds up a chemical reaction but is chemically unchanged
- Example: Enzymes are catalysts because they allow the reactions that take place in the body to occur fast enough that we can live



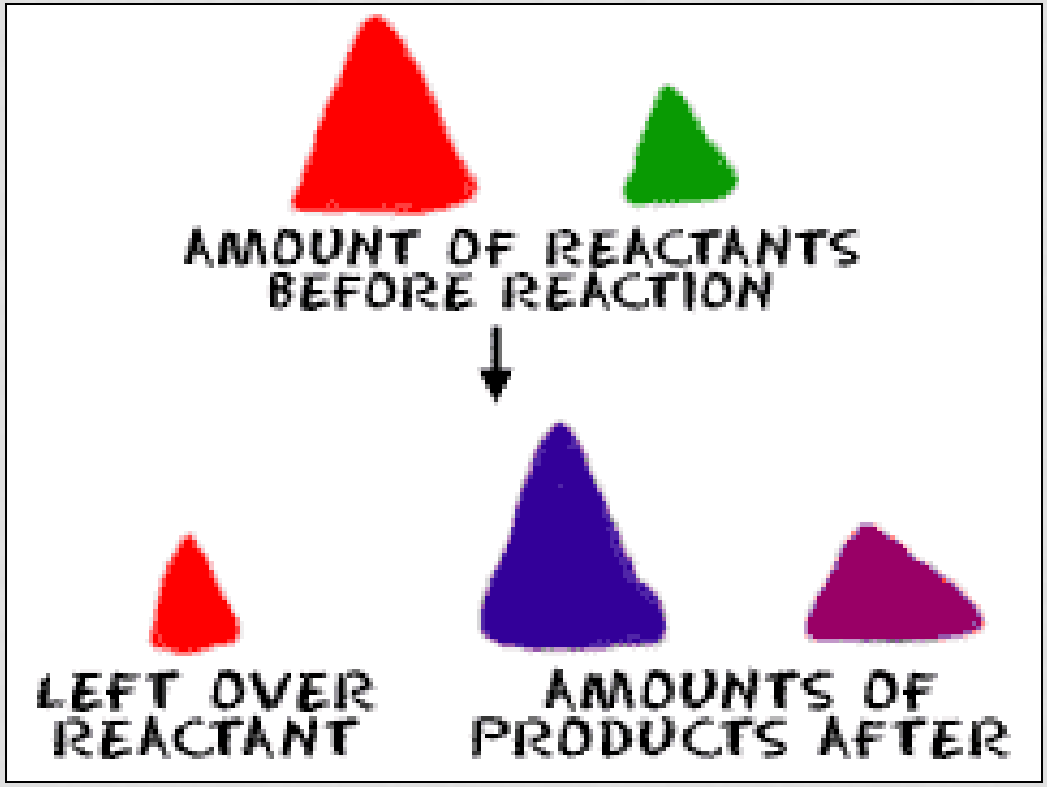
CONSERVATION OF MASS

- Definition: matter can be neither created nor destroyed
- The mass of an object or collection of objects never changes, no matter how the parts are rearranged


In chemical changes, no matter how big the bang, mass is neither gained nor lost.
CHEMISTRY IS A BLAST
SAFETY FIRST!
BANG!
70kg
70kg
Before
After
LAW OF CONSERVATION OF MATTER: Matter cannot be made or destroyed by ordinary chemical means.

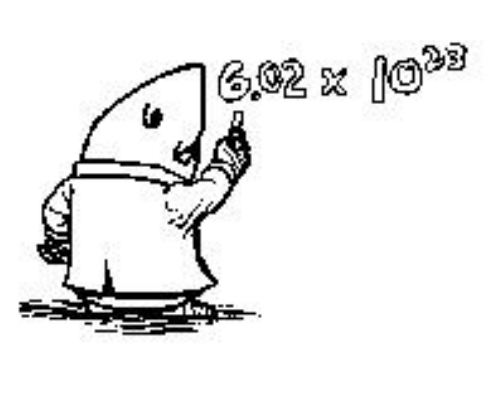
STOICHIOMETRY

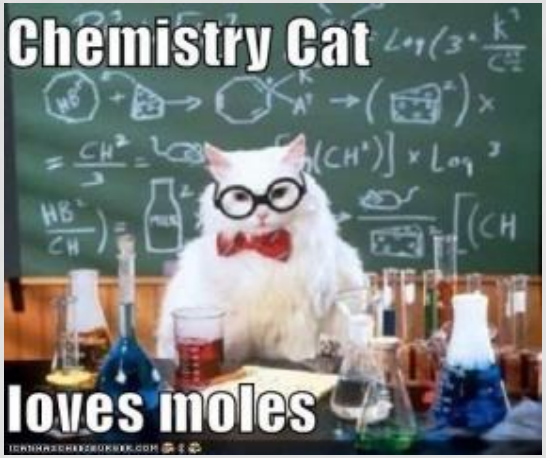
- Definition: the part of chemistry that studies amounts of substances that are involved in reactions

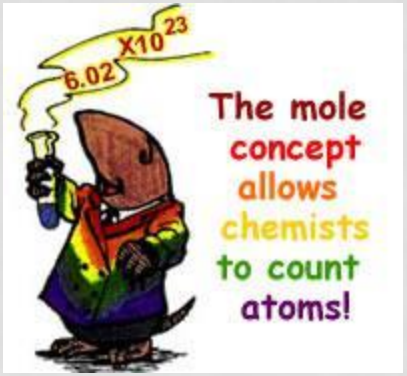


MOLE

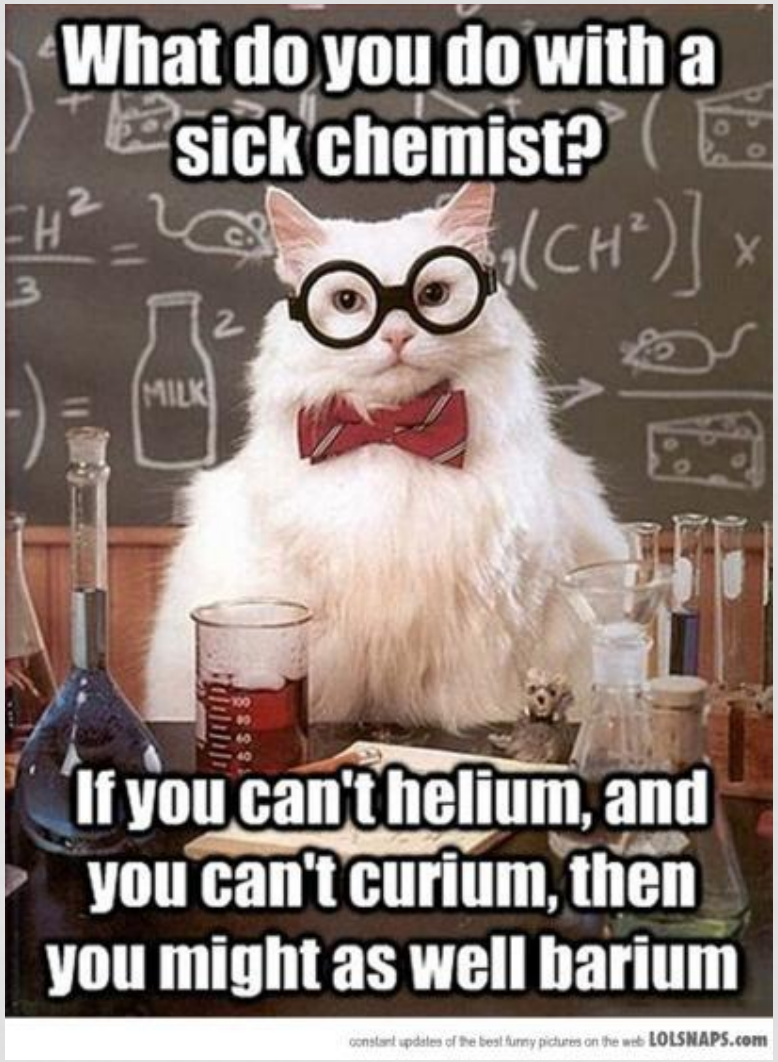
- Definition: measures the number of particles in a specific substance
- Avogadro's number = 6.02×10^{23}
- Used to convert between atoms/molecules and grams







QUESTIONS?


What do you do with a sick chemist?
If you can't helium, and you can't curium, then you might as well barium
constant updates of the best funny pictures on the web LOLSNAPS.com